Work Order ID 92843 *92843*

November-09-12 1:43:54 PM

Item ID: D3651-13 **Accept** *N900040100* **Setup Start** *NS1*

Revision ID:

Item Name: Outside Doubler **Stop** *NS2*

Start Date: 11/08/12 **Start Qty:** 2.00 *2* **Cust Item ID:**

Required Date: 11/16/12 **Req'd Qty:** 2.00 *2* **Customer:**

Reference:

Run Start *NR1*

Approvals: **Process Plan:** MLJ **Date:** 12-11-12 **Tooling:** ______ **Date:** ______

Stop *NR2*

QC: ______ **Date:** ______ **SPC (Y/N):** ______ **Date:** ______

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp

Draw Nbr	Revision Nbr
D3651	Rev B

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
100 *100* Waterjet FLOW CNC Waterjet 304.018	FLOW WATER JET **Memo** 1-Cut as per Dwg D3651 Dwg Rev: B Prog Rev: B 2-Deburr if necessary	0.00 0.00				2			B12-11-13
110 *110* QC Quality Control	QC2- Inspect parts off machine FAI/FAIB **Memo**	0.00 0.00				2			B12-11-13
120 *120* QC Quality Control	QC8- Inspect parts - second check **Memo**	0.00 0.00 DAS 15 9-89 12 11 13				2			

DQA: ________ Date: ____________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order: ______	DISPOSITION	AGAINST DEPARTMENT/PROCESS			
Part No. ______	Rework ☐	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐
NCR No. ______	Scrap ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐
	Use-as-is ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
	Work Order Update ☐	Large Fab ☐	Composite ☐	Supplier ☐	☐

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data ☐									
Equip/Tooling ☐									
Operator ☐									
Material ☐									
Setup ☐									
Other ☐									
Process ☐									
Supplier ☐									
Training ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear	General			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other ______
☐ Ripples in Bend	☐ Drill Holes	☐ Offset		______
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration		______
☐ Turning Sequence	☐ Finish	☐ Out of Sequence		______
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		

Work Order ID 92843 *92843*

November-09-12 1:43:54 PM

Item ID: D3651-13 **Accept** *N900040100* **Setup Start** *NS1* **Stop** *NS2*

Revision ID:

Item Name: Outside Doubler

Start Date: 11/08/12 **Start Qty:** 2.00 *2* **Cust Item ID:**

Required Date: 11/16/12 **Req'd Qty:** 2.00 *2* **Customer:**

Reference:

Run Start *NR1* **Stop** *NR2*

Approvals: **Process Plan:** ______ **Date:** ______ **Tooling:** ______ **Date:** ______

QC: ______ **Date:** ______ **SPC (Y/N):** ______ **Date:** ______

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130 *130* Packaging Packaging	Identify as per dwg & Stock Location: ST 188 Memo	0.00 0.00				2x			SP 2-11-14.
140 *140* QC Quality Control	QC21- Final Inspection - Work Order Release Memo	0.00 0.00					12/11/15		[illegible]

U 2.11.14

DQA: ________ Date: ________________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

	DISPOSITION	AGAINST DEPARTMENT/PROCESS			
Work Order: ____________	Rework ☐	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐
Part No. ____________	Scrap ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐
	Use-as-is ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
NCR No. ____________	Work Order Update ☐	Large Fab ☐	Composite ☐	Supplier ☐	☐

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data ☐									
Equip/Tooling ☐									
Operator ☐									
Material ☐									
Setup ☐									
Other ☐									
Process ☐									
Supplier ☐									
Training ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear	General			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other
☐ Ripples in Bend	☐ Drill Holes	☐ Offset		
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration		
☐ Turning Sequence	☐ Finish	☐ Out of Sequence		
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		

Picklist Print

November-09-12 1:43:54 PM

Work Order ID: 92843

Parent Item: D3651-13

Parent Item Name: Outside Doubler

Start Date: 11/08/12 **Required Date:** 11/16/12

Start Qty: 2.00 **Required Qty:** 2.00

Comments:
IPP Rev:A New Issue 07-09-27 DD verified by: EC
IPP Rev:B ECN 1113P 08-01-22 DD
IPP Rev:C ecn1162 08-04-02 DD verified by: EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M304S26GA 304/316 0.018 SHEET		Purchased	No			100	sf	418.1700	**0.68**	**1.431579**	1B12-11-13		

Location	Loc Qty	Loc Code	
MAT020	418.17		
117798	35.06		
122753	127.11		122753
123135	256		

(2)

DQA: ________ Date: ____________

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: Date:

Work Order: ____________________

Part No. ____________________

NCR No. ____________________

DISPOSITION

- Rework ☐
- Scrap ☐
- Use-as-is ☐
- Work Order Update ☐

AGAINST DEPARTMENT/PROCESS

Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐
Machining ☐	Small Fab ☐	Prod. Eng. Coor. ☐	Quality ☐
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
Large Fab ☐	Composite ☐	Supplier ☐	☐

Root Cause	Date	Step	Qty	Description of work order update or Non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Doc/Data ☐									
Equip/Tooling ☐									
Operator ☐									
Material ☐									
Setup ☐									
Other ☐									
Process ☐									
Supplier ☐									
Training ☐									
Unapproved ☐									

FAULT CATEGORY

Landing Gear	General			
☐ Bending	☐ Bend	☐ Grain	☐ Ovalized	☐ Pressure/Forced
☐ Centre Not Concentric to O/S	☐ BOM/Route	☐ Hardware	☐ Over/Under tolerance	☐ Temperature/Cure
☐ Cracks	☐ Broken/Damaged	☐ Inspection Incomplete	☐ Part Incorrect	☐ Weld
☐ Crushed/Crimped	☐ Burrs	☐ Instructions Incomplete/Unclear	☐ Part Lost/Missing	☐ Wrong Stock Pulled
☐ Cuffs	☐ Contamination	☐ Maintenance	☐ Part Moved	
☐ Heat Treat	☐ Countersink	☐ Mislabeled	☐ Positioned Wrong	
☐ Inspection Strip in Tube	☐ Cut Too Short	☐ Misread	☐ Power Loss/Surge	☐ Other ________
☐ Ripples in Bend	☐ Drill Holes	☐ Offset	________	
☐ Torque Waves in Extrusion	☐ Drawing	☐ Out of Calibration	________	
☐ Turning Sequence	☐ Finish	☐ Out of Sequence	________	
☐ Wave/Twist in Tube	☐ Folio	☐ Outside Dimensions		

DART AEROSPACE LTD	Work Order:	92843
Description: Outside Doubler	**Part Number:**	**D3651-13**
Inspection Dwg: D3651 **Rev:** B		**Page 1 of 1**

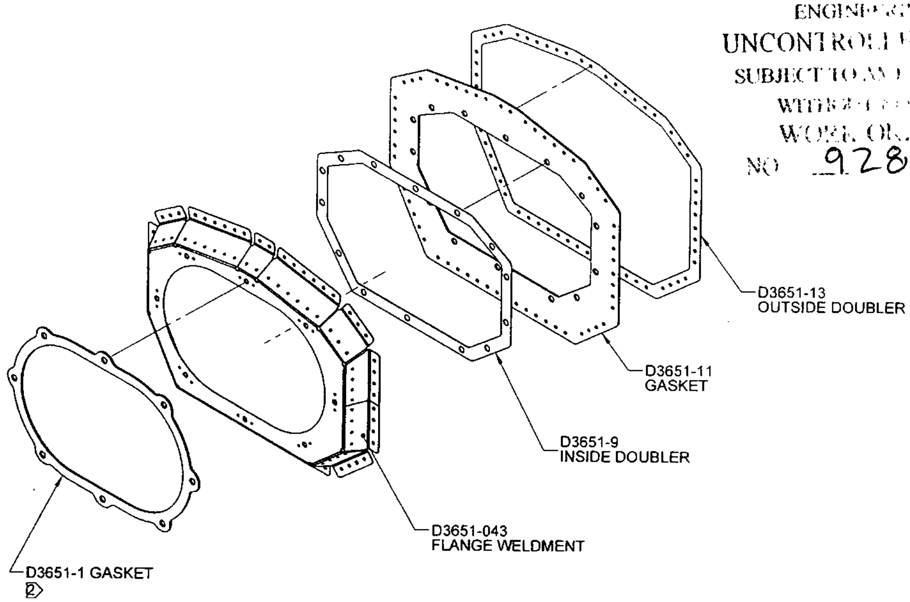
FIRST ARTICLE INSPECTION CHECKLIST

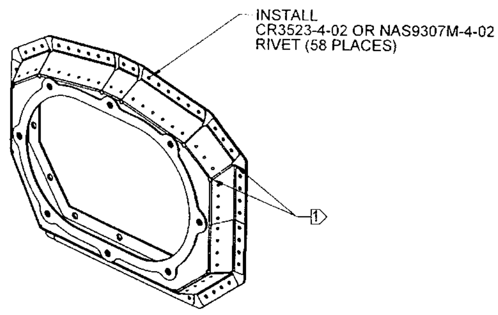
[X] **First Article** [ ] **Prototype**

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.129	+0.005/-0.001	.130	2		V .130	
0.260	+/-0.010	.265	2		V	
2.471	+/-0.010	2.467	2		V	
9.791	+/-0.010	9.790	2		PROWSON	
0.634	+/-0.010	.636	2		V	
2.564	+/-0.010	2.564	2		V	
0.52	+/-0.030	.531	2		V	
0.600	+/-0.010	.599	2		V	
0.500	+/-0.010	.498	2		V	
7.969	+/-0.010	7.963	2		V	
2.348	+/-0.010	2.340	2		V	
0.480	+/-0.010	.479	2		V	
5.571	+/-0.010	5.568	2		V	
0.696	+/-0.010	.691	2		V	
7.049	+/-0.010	7.047	2		V	
3.564	+/-0.010	3.559	2		V	
0.694	+/-0.010	.691	2		V	
1.779	+/-0.010	1.774	2		V	
8.74	+/-0.030	8.747	2		P	

Measured by:	R	Audited by:	QAS 15	Prototype Approval:	N/A
Date:	12-11-13	Date:	12.11.13	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	08.04.17	New Issue	KJ/DD	





PART LIST

QTY -041	PART NUMBER	DESCRIPTION
X	D3651-041	AFT BASE ASSEMBLY
1	D3651-043	FLANGE WELDMENT
1	D3651-1	GASKET
1	D3651-9	INSIDE DOUBLER
1	D3651-11	GASKET
1	D3651-13	OUTSIDE DOUBLER
58	CR3523-4-02 or NAS9307M-4-02	RIVET

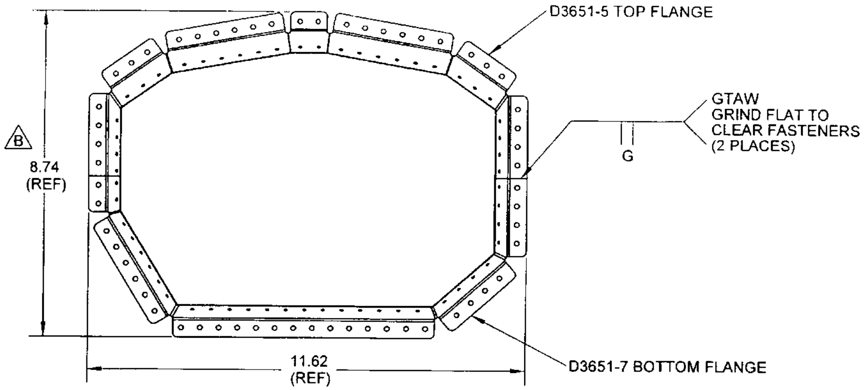
D3651-041 AFT BASE ASSEMBLY

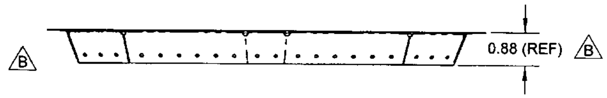
D3651-041 NOTES:
1) SEAL ALL MATING SURFACES AND GAPS USING PROSEAL 700 FIRE WALL SEALANT
2) INSTALL D3651-1 USING 3M HIGH PERFORMANCE CONTACT ADHESIVE 1357
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 1.6 lbs

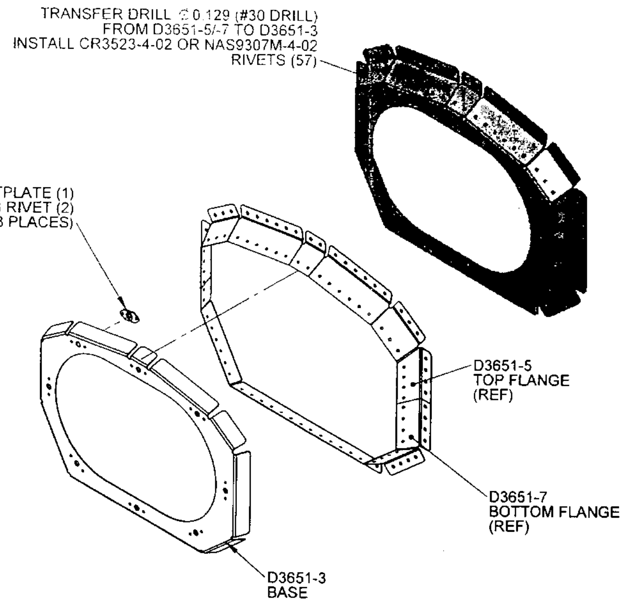
REV.	DESCRIPTION	BY	DATE
B	SHEET 1: GENERAL UPDATE SHEET 2: 8.74 WAS 8.50; 0.88 WAS 0.98; REMOVED ANGLE SHEETS 4, 5, 6, 8 & 9: GENERAL DIMENSIONAL UPDATE SHEET 7: 5.514 WAS 5.504	RF	08.01.07
A	NEW ISSUE	RF	07.11.07

DESIGN	RF	**DART AEROSPACE LTD** HAWKESBURY, ONTARIO, CANADA
DRAWN	RF	
CHECKED		DRAWING NO. D3651 — REV. B — SHEET 1 OF 9
MFG. APPR.		
APPROVED		TITLE: AFT BASE ASSEMBLY — SCALE 1:4
DE APPR.		
DATE	08.01.07	

92843







QTY -043	PART NUMBER	DESCRIPTION
X	D3651-043	FLANGE WELDMENT
1	D3651-3	BASE
1	D3651-5	TOP FLANGE
1	D3651-7	BOTTOM FLANGE
16	MS20427M3-3	RIVET
8	MS21060-3K	NUTPLATE
57	CR3523-4-02 or NA9307M-4-02	RIVET

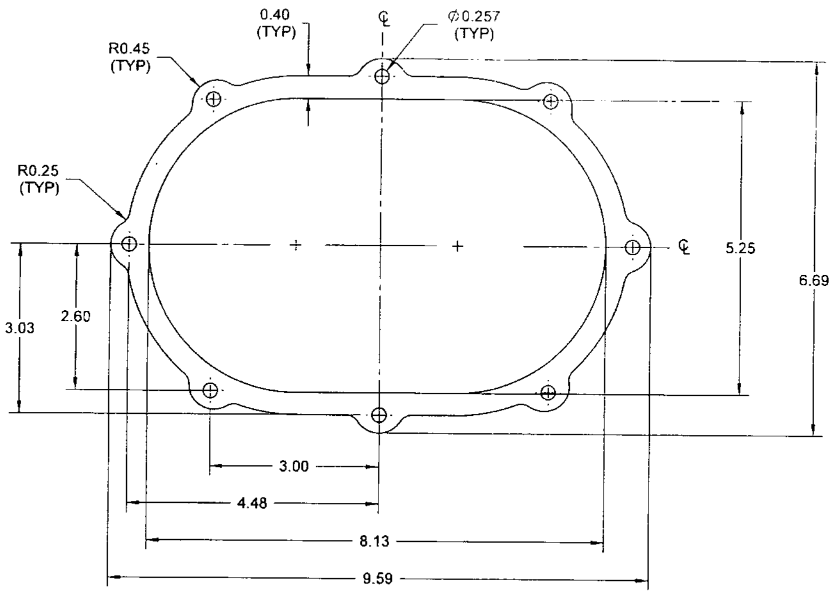
08.03.27

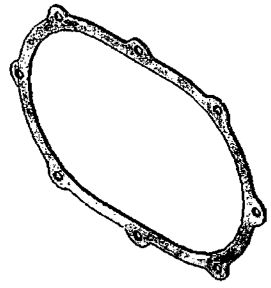
D3651-043 FLANGE WELDMENT

D3651-043 NOTES:
1) WELD PER QSI 004
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 0.76 lbs

DESIGN	RF	**DART AEROSPACE LTD** HAWKESBURY, ONTARIO, CANADA
DRAWN	RF	DRAWING NO. D3651 — REV. B — SHEET 2 OF 9
CHECKED		
MFG. APPR.		TITLE: AFT BASE ASSEMBLY — SCALE 1:3
APPROVED		
DE APPR.		
DATE	08.01.07	

92843





D3651-1 GASKET

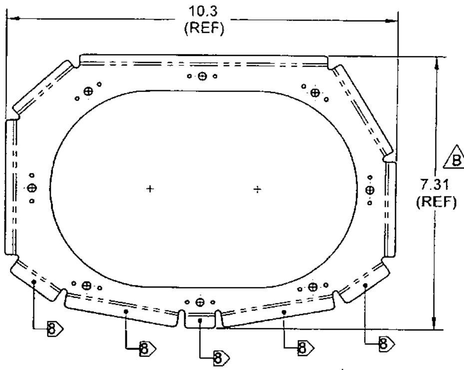
NOTES:
1) MATERIAL: THERMO-CHEM P/N G-89, (REF. 0.060 THICK)
POSSIBLE SUPPLIER: A.R. THOMSON GROUP
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) PART IS SYMMETRIC ABOUT ℄
8) WEIGHT: 0.09 lbs

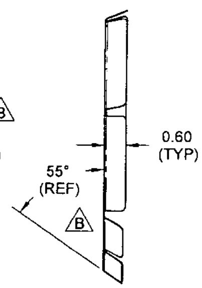
08-03-27

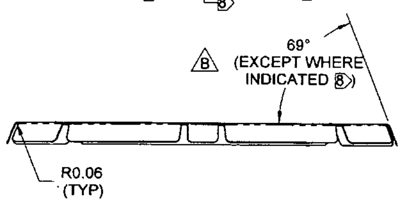
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DRAWN	RF	
CHECKED		DRAWING NO. D3651 REV. B SHEET 3 OF 9
MFG. APPR.		
APPROVED		TITLE AFT BASE ASSEMBLY SCALE 1:2
DE APPR.		
DATE	08.01.07	COPYRIGHT © 2007 BY DART AEROSPACE LTD

92843

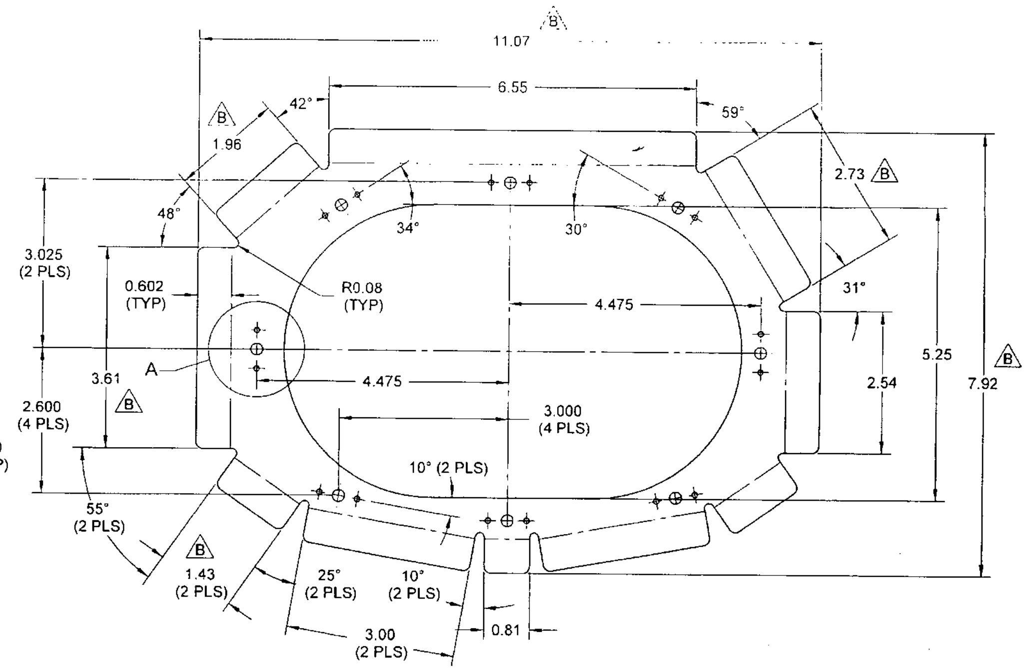




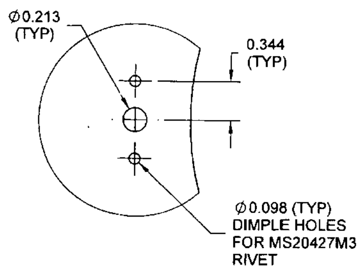




D3651-3 BASE
(MAKE FROM D3651-3F FLAT PATTERN)



D3651-3F FLAT PATTERN



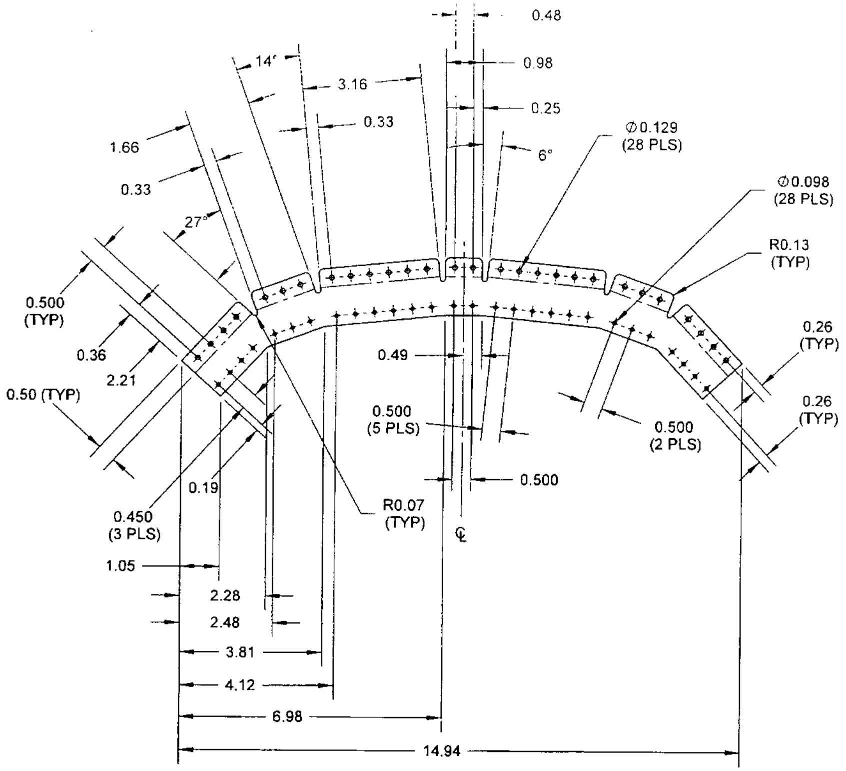
DETAIL A

NOTES:
1) MATERIAL: AISI 304/316 STAINLESS STEEL 0.018 (26 GAUGE) SHEET, PER MIL-S-5019 (REF. DART SPEC. M304S26GA)
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 0.27 lbs
8) BEND TO 55° WHERE INDICATED

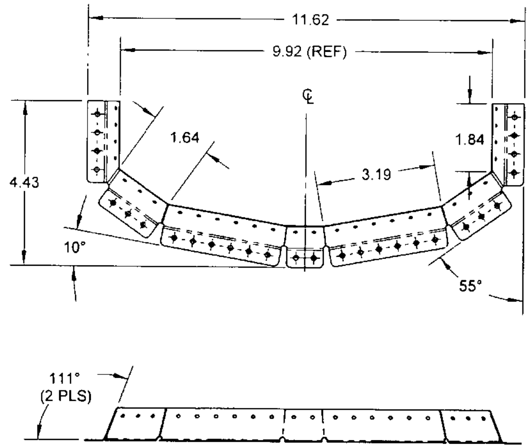
08.03.27

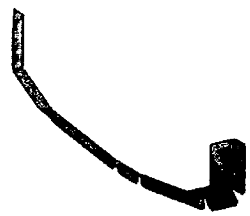
DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
DRAWN	RF	
CHECKED		DRAWING NO. D3651 — REV. B — SHEET 4 OF 9
MFG. APPR.		
APPROVED		TITLE: AFT BASE ASSEMBLY — SCALE 1:2
DE APPR.		
DATE	08.01.07	

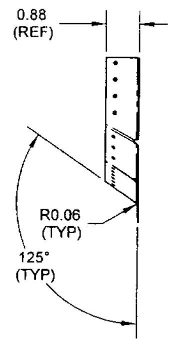
92843



D3651-5F FLAT PATTERN (B)







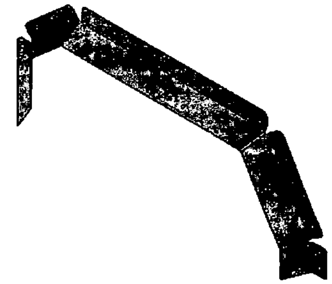
D3651-5 TOP FLANGE BEND DETAIL (B)
(MAKE FROM D3651-5F FLAT PATTERN)

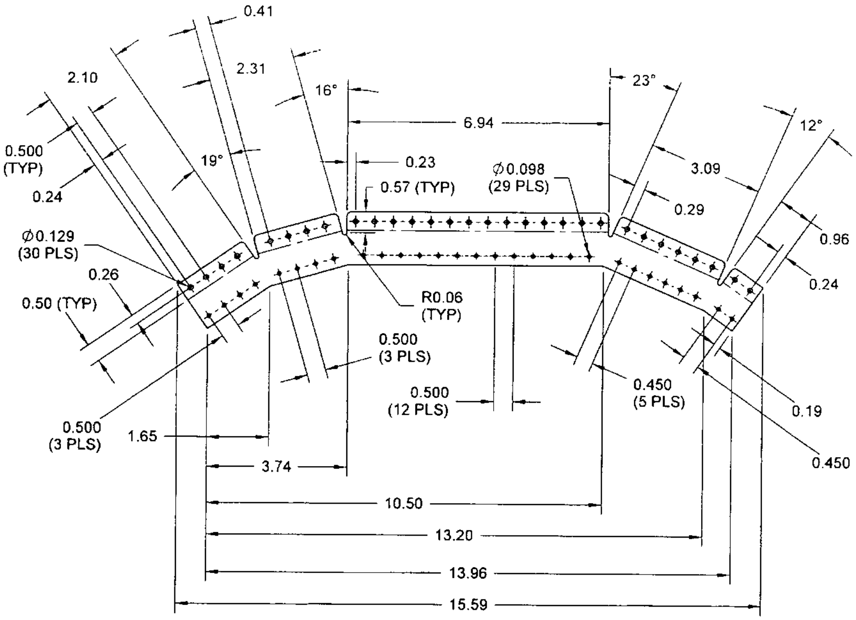
08-03-27 MP

NOTES:
1) MATERIAL: AISI 304/316 STAINLESS STEEL 0.018 (26 GAUGE) SHEET, PER MIL-S-5019
(REF. DART SPEC. M304S26GA)
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 0.02 lbs

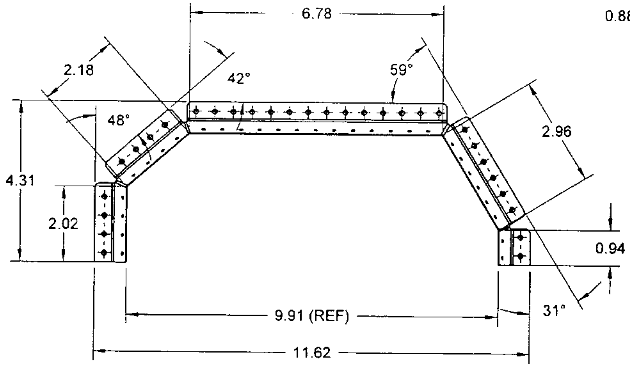
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DRAWN	RF	
CHECKED	[signature]	DRAWING NO. D3651 — REV. B — SHEET 5 OF 9
MFG. APPR.	[signature]	
APPROVED	[signature]	TITLE: AFT BASE ASSEMBLY — SCALE 1:3
DE APPR.	[signature]	
DATE	08.01.07	

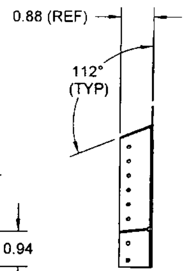
92843





D3651-7F FLAT PATTERN (B)





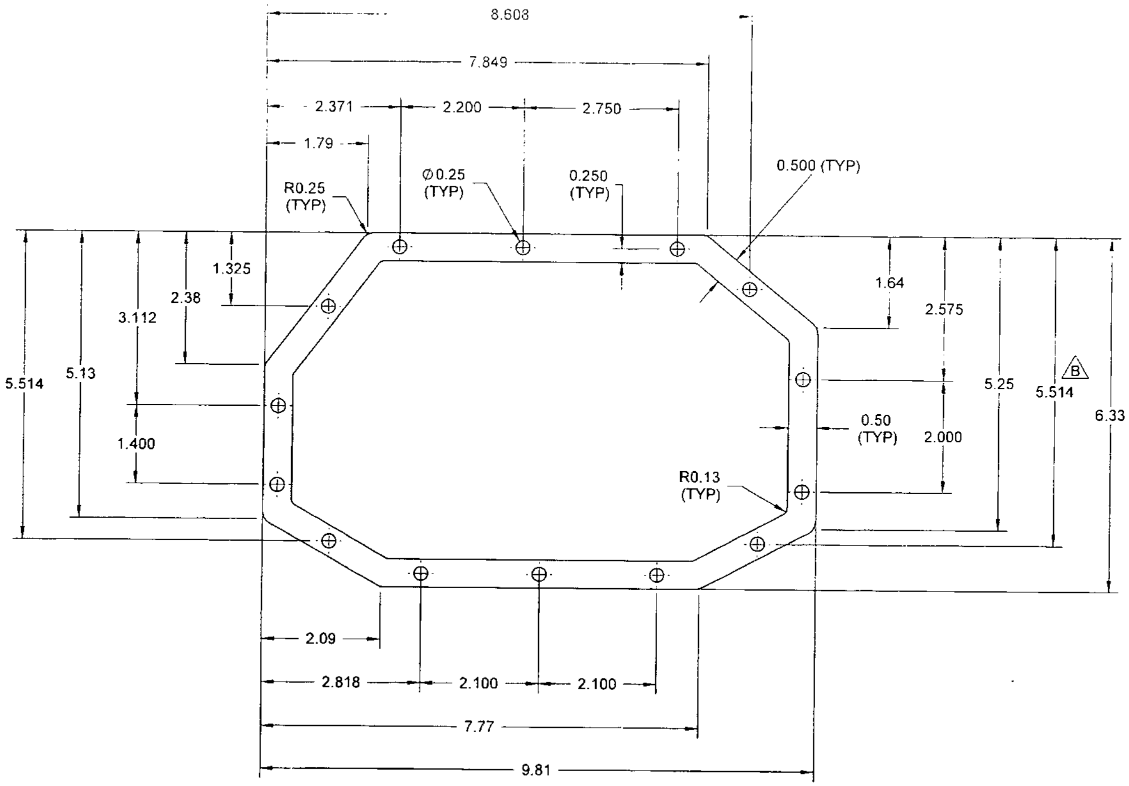
D3651-7 BOTTOM FLANGE BEND DETAIL (B)
(MAKE FROM D3651-7F FLAT PATTERN)

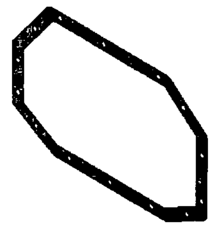
08.03.27

NOTES:
1) MATERIAL: AISI 304/316 STAINLESS STEEL 0.018 (26 GAUGE) SHEET, PER MIL-S-5019
(REF. DART SPEC. M304S26GA)
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 0.02 lbs

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
DRAWN	RF	
CHECKED	[signature]	DRAWING NO. D3651 REV. B
MFG. APPR.	[signature]	SHEET 6 OF 9
APPROVED	[signature]	TITLE AFT BASE ASSEMBLY SCALE 1:3
DE APPR.	[signature]	
DATE	08.01.07	

92843





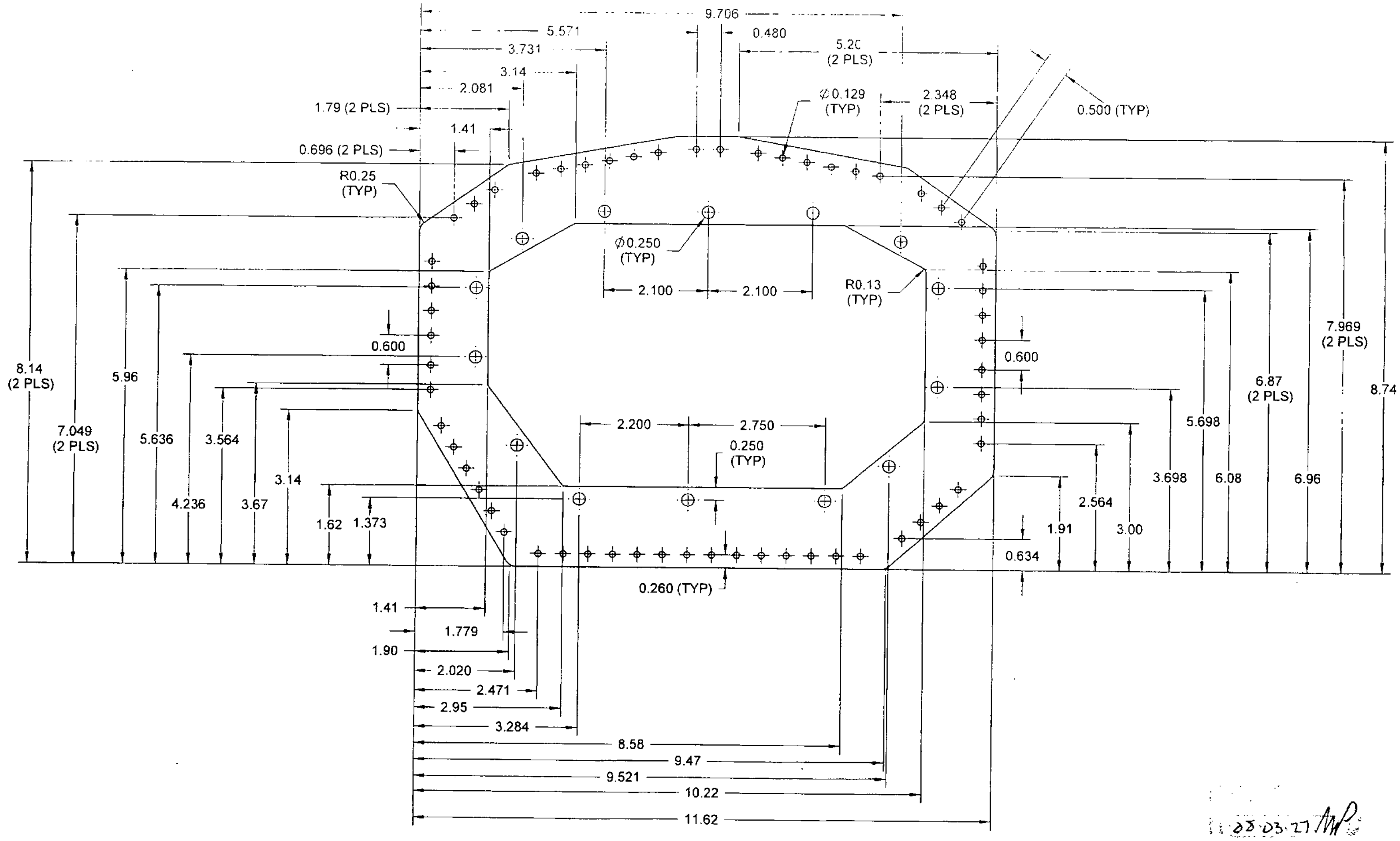
D3651-9 INSIDE DOUBLER

08.03.27

NOTES:
1) MATERIAL: AISI 304/316 STAINLESS STEEL 0.018 (26 GAUGE) SHEET, PER MIL-S-5019 (REF. DART SPEC. M304S26GA)
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 0.07 lbs

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
DRAWN	RF	DRAWING NO. D3651 — REV. B — SHEET 7 OF 9
CHECKED		
MFG. APPR.		TITLE: AFT BASE ASSEMBLY — SCALE 1:2
APPROVED		
DE APPR.		
DATE	08.01.07	

92843



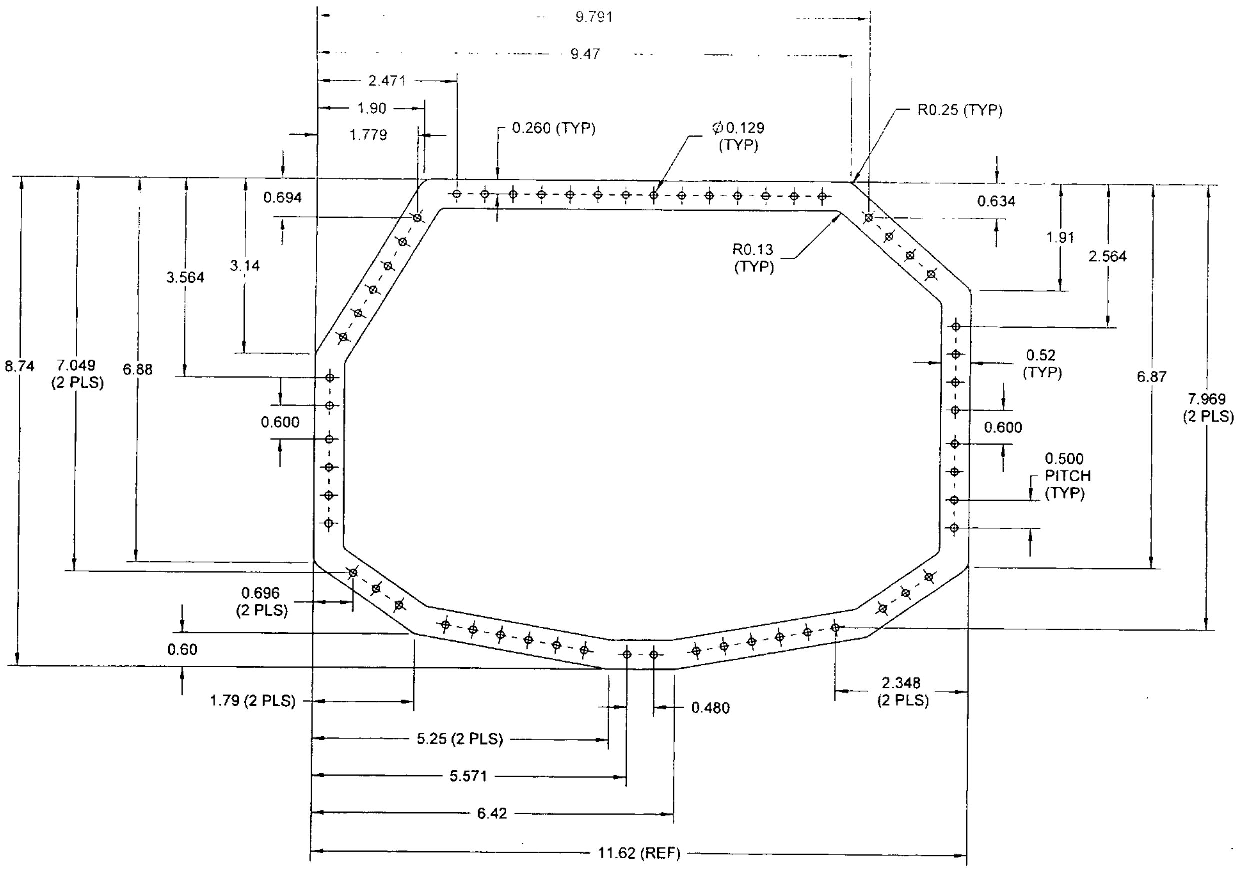
08.03.27

NOTES:
1) MATERIAL: THERMO-CHEM P/N G-89, (REF. 0.060 THICK)
POSSIBLE SUPPLIER: A.R. THOMSON GROUP
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 0.2 lb

D3651-11 GASKET (B)

DESIGN	RF	**DART AEROSPACE LTD** HAWKESBURY, ONTARIO, CANADA
DRAWN	RF	
CHECKED		DRAWING NO. D3651 — REV. B — SHEET 8 OF 9
MFG. APPR.		
APPROVED		TITLE AFT BASE ASSEMBLY — SCALE 1:2
DE APPR.		
DATE	08.01.07	

92843



08.03.27

D3651-13 OUTSIDE DOUBLER (B)

NOTES:
1) MATERIAL: AISI 304/316 STAINLESS STEEL 0.018 (26 GAUGE) SHEET, PER MIL-S-5019 (REF. DART SPEC. M304S26GA)
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 0.10 lbs

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
DRAWN	RF	DRAWING NO. D3651 REV. B SHEET 9 OF 9
CHECKED		
MFG. APPR.		
APPROVED		TITLE AFT BASE ASSEMBLY SCALE 1:2
DE APPR.		
DATE	08.01.07	